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(71) Applicant (for all designated States except US):
**GESELLSCHAFT FUER SCHWERIONEN-
FORSCHUNG MBH** [DE/DE]; Planckstrasse 1, 64291
Darmstadt (DE).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **SIWY, Zuzanna**
[PL/DE]; Würzburgerstr. 18, 64291 Darmstadt (DE).
BEHREND, Jan [DE/DE]; Georgenstrasse 53, 80799
München (DE). **FERTIG, Niels** [DE/DE]; Loristr. 9,
80335 München (DE). **FULINSKI, Andrzej** [PL/PL];

Aleje Slowackiego 15/6, PL- Krakau (PL). **MARTIN, Charles, R.** [US/US]; 2135 NW 28th Street, Gainesville, FL (US). **NEUMANN, Reinhard** [DE/DE]; Jahnstr. 50, 69221 Dossenheim (DE). **TRAUTMANN, Christina** [DE/DE]; Würzburgerstr. 18, 64291 Darmstadt (DE). **TOIMIL MOLARES, Eugenia** [ES/DE]; Dieburgerstr. 241/7, 64291 Darmstadt (DE).

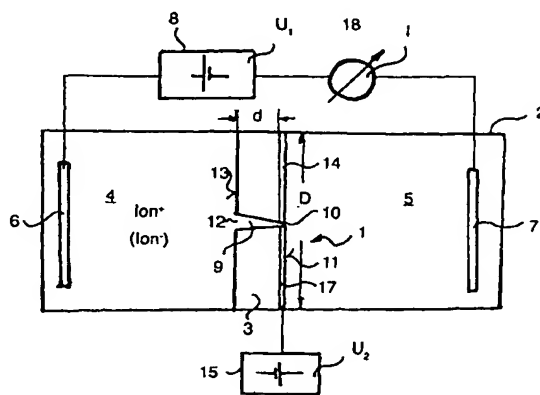
(74) Agents: **BOETERS, Hans, D.** et al.; Boeters & Lieck, Bereiteranger 15, 81541 München (DE).

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(54) Title: NANODEVICE FOR CONTROLLED CHARGED PARTICLE FLOW AND METHOD FOR PRODUCING SAME



(57) Abstract: The present invention relates to an apparatus having a nanodevice (1) for controlling the flow of charged particles in an electrolyte. Such apparatus comprises an electrolytic bath container (2) divided by a polymeric membrane foil (3) into a first (4) and a second compartment (5), wherein each compartment (4, 5) comprises an electrode (6, 7) connected to a voltage supply (8). Further the apparatus comprises at least one asymmetric pore (9) forming a via hole through said foil (3), wherein said pore (9) provides a narrow opening (10) of a diameter in the range of several nanometers down to about one nanometer on a front side (11) of said foil (3) and a wide opening (12) in the range of several ten nanometers up to several hundred nanometers on a back side (13) of said foil (3). Further, the apparatus comprises an electrically conductive layer (14) surrounding said narrow opening (10) on said front side (11) and a gate voltage supply (15) connected to said electrically conductive layer (14) on said front side (11) of said foil (3) controlling the flow of charged particles within said nanodevice (1) from said first compartment (4) to said second compartment (5) vice versa. The invention further relates to a method for producing such a nanodevice (1).

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